

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (Currently amended) A system that facilitates conveying at least one notification, comprising:

a prioritization component that infers an urgency of an obtained message, the inference is based at least ~~upon~~ based upon in part on considerations of a message sender, a message type, ~~content, or a combination thereof~~ type or message content;

a context analyzer that employs a decision model to infer information regarding an attentional state and an availability state of a user, the inference is based at least in part on an expected utility of conveying the obtained message to the user, the expected utility is determined through analysis of a value of conveying the obtained message versus a cost of conveying the obtained message, the context analyzer utilizes end point sensing of at least one device to gather context information of the user employed to evaluate value and cost of conveying the obtained message;

a resolution component that determines a time period to deliver the message based upon the urgency of the obtained message, the time period is a bounded deferral period that is bounded between a time the message is obtained and a deadline for making ~~[[a]] the~~ user aware of the obtained message that containing contains information of value to the user, the bounded deferral period depends at least in part on the urgency of the information; and

a notification component that conveys the ~~information obtained message to the user~~ based at least in part upon ~~endpoint sensing of at least one device and~~ the inferred attentional and availability states and the bounded deferral period such that the message is conveyed within the bounded deferral period.

2. (Cancelled)

3. (Original) The system of claim 1, the endpoint sensing relates to a transmission reliability associated with a probability that a message is conveyed to a user given endpoint sensing of the device and/or estimates given background information.
4. (Previously presented) The system of claim 1, the bounded deferral is associated with at least one of sensors, calendar information, an alerting type and a time of day to determine whether a user is too busy to receive an alert currently or in a predetermined time in the future.
5. (Original) The system of claim 4, further comprising policies for processing a deadline associated with conveying notifications.
6. (Original) The system of claim 5, the policies include at least one of:
 - if the deadline is reached and an alert has not yet been delivered, the alert is delivered at the deadline;
 - if a deadline will pass and there is no purpose in waiting, then the alert is passed immediately.
7. (Original) The system of claim 4, the sensors determine a user current cost of interruption or state of busy-ness.
8. (Original) The system of claim 4, the sensors determine when a user available to receive information.
9. (Original) The system of claim 3, further comprising sensors that determine information relating to the transmission reliability.
10. (Original) The system of claim 9, the sensor information is passed to a central notification manager that is deliberating about where to send messages, or an endpoint device computes the transmission reliability from related sensors and passes the transmission reliability to the central notification manager.

11. (Previously presented) The system of claim 1, the bounded deferral period is employed to allow a system to take dialog initiative in a conversational application.
12. (Original) The system of claim 11, the application at least one of initiates a conversation or continues a conversation that has been interrupted by a user's attention being diverted elsewhere for a task or another conversation.
13. (Cancelled)
14. (Original) The system of claim 1, further comprising a gaze sensor to determine when a user observes a display.
15. (Original) The system of claim 14, further comprising a deferral period until a user looks away from an item of importance absorbing the user's attention.
16. (Original) The system of claim 9, the sensors compute a transmission reliability based on at least one of heat, motion, acoustical information, and wireless information.
17. (Original) The system of claim 1, further comprising a component that causes bounded deferral and transmission reliability to interact.
18. (Original) The system of claim 17, further comprising a component to determine if a transmission reliability has reached a threshold before a deferral tolerance is reached, a user can be notified via a first type of alert while bypassing a second type of alert.
19. (Previously presented) The system of claim 1, the bounded deferral period is applied to putting a caller on hold and enabling a break through over a predetermined time horizon.
20. (Original) The system of claim 19, the bonded deferral is applied by an endpoint device or by a standard communications system connected to sensors.

21. (Original) The system of claim 1, further comprising bounded deferral policies that are coordinated with other parameters.
22. (Original) The system of claim 21, the other parameters are related to a user's location and/or context.
23. (Original) The system of claim 1, further comprising tasks of predetermined length that are available in contexts where a user is reviewing media.
24. (Original) The system of claim 1, further comprising global bounded deferral policies that are viewed as approximation of more detailed decision-theoretic analyses.
25. (Original) The system of claim 1, further comprising a component to provide low time criticality messages during a breakthrough period of another message.
26. (Previously presented) The system of claim 1, when a bounded deferral policy has been reached, an endpoint device can be instructed to send a message back to a central notification manager or a sender of an alert, informing the central notification manager that the endpoint device is unsuccessful at relaying a message.
- 27-29. (Cancelled)
30. (Currently amended) The system of claim [[27]] 1, the at least one device employs one or more sensors locally to determine a suitable time within an indicated bounded deferral period to alert a user.
31. (Currently amended) The system of claim [[30]] 1, ~~further comprising assigning the~~ prioritization component assigns more urgent messages a shorter bounded deferral period.

32. (Currently amended) The system of claim [[27]] 1, at least one of the device and the notification component process multi-message interactions, such that when a message breaks through to the user, other parties can be allowed to come through to the user.
33. (Currently amended) The system of claim [[27]] 1, at least one of the device and the notification component assigns a value for multiple messages that leads to a shorter bounded deferral period.
34. (Original) The system of claim 33, at least one of the device and the notification component determine a sum of the value of independent messages.
35. (Currently amended) The system of claim [[27]] 1, ~~further comprising the prioritization component includes~~ one or more parameters on the bounded deferral data that is locally computed or determined based on local analysis of identity of a sender or nature of a message content.
36. (Original) The system of claim 35, the parameters are received as part of metadata or control data from a central notification manager, the metadata or control data included in a notification schema associated with a message.
37. (Original) The system of claim 35, the parameters are a function of a variable set by another user or a function of a priority value set by a notification manager.
38. (Currently amended) The system of claim [[27]] 1, the at least one device is associated with one or more application models.
39. (Original) The system of claim 38, the application models include local calendar information to guide a device to hold alerts until after an event.

40. (Original) The system of claim 38, the application models include sound receptors that are employed to sense when someone has stopped speaking or sense a background noise.
41. (Original) The system of claim 38, the application models includes one or more motion devices to sense at least one of a user's movements, a user's has stopped talking, or when a car has stopped.
42. (Original) The system of claim 38, the application models process ringing after a bounded deferral period is reached and then again as backup after quiet or other sensor condition.
43. (Original) The system of claim 38, the application models pause until a person is in proximity or has touched a device before delivering a notification.
44. (Original) The system of claim 38, the application models automated cause deferral of a phone ring, wherein silence is applied for a predetermined number of rings while waiting for speech to stop.
45. (Original) The system of claim 44, the application models employ an agent picking up a phone if a user is sensed to be temporarily busy and asking a caller to hold on, then connecting through when the user has stopped speaking or if a bound has been reached.
46. (Original) The system of claim 45, the agent performs phone ringing deferral for selected people or people within specially indicated groups.
47. (Original) The system of claim 38, the application models employ at least one of a Global Positioning System (GPS), an 802.11 signal strength sensor, an infrared proximity sensors, and a touch sensor.

48. (Currently amended) The system of claim [[27]] 1, at least one of the device and the notification component determines at least one of attention-sensitive costs of disruption, a value of information, a loss based in decreased fidelity, and a transmission reliability associated with the use of an alerting modality of the device.

49. (Original) The system of claim 48, the transmission reliability of the device is represented as a probability p , $p(\text{transrel} | \text{context})$, that is the likelihood of getting through on the device given context, the context is a function, $f(\text{context})$ or $f(\text{sensed states})$.

50. (Currently amended) The system of claim [[27]] 1, further comprising a subscription service provided at a notification source that enables users to tag notifications according to a predefined priority.

51. (Original) The system of claim 50, the predefined priority is assigned based upon a happening of a condition.

52. (Original) The system of claim 50, further comprising a subscription user interface to enable users to configure attributes of a notification.

53. (Original) The system of claim 52, the attributes are defined in a notification schema.

54-55. (Cancelled)

56. (Original) A computer readable medium having computer readable instructions stored thereon for implementing at least on of the device and the notification component of claim 1.

57. (Currently amended) A system that facilitates communications, comprising:
- means for obtaining a notification message that contains information of value to a user;
 - means for sensing a contextual situation of the user;
 - means for processing a value of notifying the user of the message and a cost of notifying the user of the message based upon the sensed contextual situation;
 - means for determining an expected utility of notifying the user of the message based upon the value and cost;
 - means for employing the expected utility, the value and the cost in a decision model;
 - means for ~~sensing~~ inferring an attentional state of [[a]] the user based the decision model;
 - means for assigning an urgency to the notification message based upon considerations of message sender, message type or message content;
 - means for determining a bounded deferral period based at least in part on the assigned urgency, the bounded deferral period ~~that~~ relates to a maximum time that conveyance of the notification message can be deferred, the deferral period is bounded between a time when the notification message is obtained and the maximum time; and ~~deadline for conveying information of value to a user; and~~
 - means for ~~employing the sensed state in connection with~~ conveying [[a]] the notification message to the user in accordance with the bounded deferral period and the inferred attentional state such that the message is conveyed within the bounded deferral period.

58. (Currently amended) A method that facilitates conveying notifications, comprising:
using at least one device to infer information regarding an attentional state and/or location of a user, the inference is based at least in part on a temporal decision model;

determining a bounded deferral period that represents a time period from receipt of a message to a deadline for making a user aware of a message containing information of value to the user, the bounded deferral period is dependent on the urgency of the information of value, the urgency is inferred from considerations of at least one of a message sender, a message type or content;

employing a decision model, the decision model includes processing at least one of a value of actions or a cost of actions, the processing determines an expected utility with conveying the notification to the user, the value of actions or cost of actions determined at least in part on considerations of attentional focus and workload of the user, attentional focus represents the task or item occupying the attention of the user, the attentional focus and workload determined based at least in part on at least one of perceptual sensors, device interactions, a calendar, a current day or a current time;

employing the bounded deferral period, the inferred information and the decision model in connection with decision-making regarding conveying a notification to the user of the message, the decision-making determines if a suitable time exists to convey the notification within the bounded deferral period and before the deadline; and

conveying the notification to the user within the bounded deferral period and by at least the deadline specified by the bounded deferral period.

59-62. (Cancelled)